

MACWORLD EXPO '87 BOSTON August 11, 12, & 13 BAYSIDE EXPO CENTER



PLUS ■ Apple in business ■ Success stories in—Desktop publishing—Desktop communications—Presentations—Databases—Small Business

Advertising Supplement to the Boston Business Journal

Macworld Expo/Boston Conference Schedule*

**Tuesday, August 11 through
Thursday August 13**

Tuesday, August 11

- 11:15-** The Second Generation: The
12:00 Revolution Continues...
[Room H]
12:00- Industry Forum:
12:50 The 1987 Software Developer's Guide (12:00-1:50)
[Room E]
Getting Started on
Your Mac
[Room H]
How To Create Professional
Presentations
[Room F]
Medical Computing of the
Future:
Paging Dr. Macintosh!
[Room G]

- 1:00-** Getting Started in
1:50 Word Processing
[Room F]
Power User Tips #1:
Getting the Most Out of
Workgroup Computing
[Room H]
The Future of Macintosh
Graphics and Animation
[Room G]
2:00- Industry Forum:
2:50 Vertical Markets and
VAR Solutions
[Room F]
Getting Started in
Networking
[Room E]
What's Available in Macintosh
Accounting Software
[Room H]
How To Become a
Power User
[Room G]

- 3:00-** Enhancing the Power
3:50 of AppleTalk
[Room E]
Meet the Programmers!
[Room F]
Engineering Solutions on
the Mac
[Room G]
UNIX on the Mac:
What's New?
What's Now?
[Room H]
4:00- The Mac in Education
4:50 [Room F]
Maximizing Macs and
IBMs in the Same Office
[Room E]
Power User Tips #5:
Hard Disk Secrets
[Room G]
The Macintosh Yesterday
and Tomorrow
[Room H]

- 5:00-** The Macworld Expo User
5:50 Group Extravaganza, Part I
[Room F]
Bill Atkinson Demonstrates
Apple's New HyperCard
Software
[Room E]

Wednesday, August 12

- 11:15-** Are Personal Computers
12:00 There Yet?
[Room F/G]
12:00- Keynote Panel Discussion:
1:50 The Macintosh in the Future
[Room F/G]
2:00- The Beginner's Guide to
2:50 Programming Languages
[Room E]
How to Start and Survive in
Business on Your Mac
[Room H]
3:00- The Mac Clinic
3:50 [Room F]
Desktop Communications
Overview
[Room H]
New Adventures in
Programming
[Room G]
All About 4th DIMENSION
[Room E]
4:00- The Beginner's Guide
4:50 to Graphics
[Room F]
CAD on the Mac
[Room G]
Power User Tips #2:
Advanced Tips and Tools for
Desktop Publishing
[Room E]
Networking Techniques:
Does Anyone Have the
Answer?
[Room H]
5:00- The Macworld Expo User
5:50 Group Extravaganza, Part II
[Room F]

Thursday, August 13

- 11:15-** Success in Software:
12:00 The Next Decade
[Room H]
12:00- Music on the Mac
12:50 [Room F]
The Mac and the Mainframe
[Room H]
Power User Tips #3:
Customizing Your System
[Room G]
Multimedia Hypercard: The
Imagination's Power Tool
[Room E]
1:00- The Mac in the Law Office
1:50 [Room F]
The Future of Desktop
Publishing on the Mac
[Room E]
The Developer's Tool Kit
[Room G]
Connecting the Mac to
the DEC World
[Room H]
2:00- The Beginner's Guide to
2:50 Databases
[Room F]
Desktop MTV
[Room E]
The Higher Education
Mac Marketplace
[Room H]

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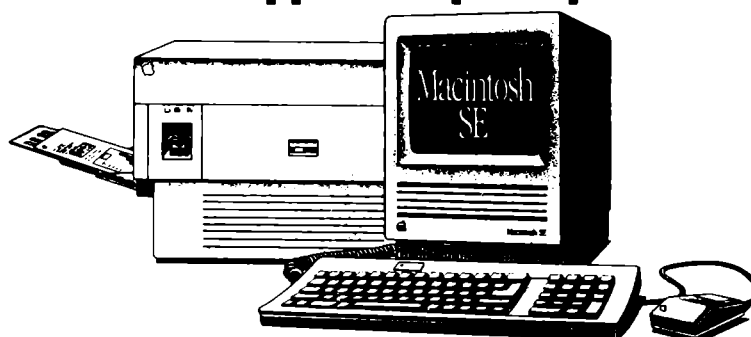
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Conference Schedule — con't

- Power User Tips #4:
How Can I Connect My
Mac to _____?
[Room G]
- 3:00- Industry Forum:
3:50 Mac Software: The Next
Generation
[Room H]
Paint Software on the Mac
[Room F]
Relational Database
Update, Part 1:
Technical Overview
[Room E]
MPW/MacApp Update
[Room G]
- 4:00- Industry Forum:
4:50 International Distribution
and Marketing
[Room F]
Getting Started in
Desktop Publishing
[Room G]
The Mac and CD-ROM
[Room H]
Relational Database
Update, Part 2:
Meet the Publishers
[Room E]
- 5:00- The Macworld Expo User
5:50 Group Extravaganza, Part III
[Room F]
Bill Atkinson Demonstrates
Apple's New HyperCard
Software
[Room E]

*subject to change

1987 MacWorld Exposition

MacWorld Exposition — the world of Macintosh — is all about the Apple Macintosh, all under one roof. This 1987 Expo focuses on products for the business and education markets, with 270 exhibiting companies demonstrating products in 700 booths. It also includes a full conference schedule, featuring Apple Computer executives John Sculley, Apple President and CEO, and Jean Louis Gasee, Apple Senior Vice President of research and development. Representing Apple Computer, Mr. Sculley will reflect on the past ten years of Apple Computer and discuss what's ahead for the company in the opening address entitled "The Second Generation: The Revolution Continues." Mr. Gasee will speak about the past, present and future of personal computing in "Are Personal Computers There Yet?" Other noted industry speakers will present on a variety of topics concerning programming, business, and personal computing on the Macintosh.

One of the most innovative features of MacWorld Exposition is its comprehensive offering of conferences, speakers and discussions. A blue-ribbon Keynote panel discussion on the growth of the Macintosh (including Guy Kawasaki of Acius, Inc. and Jonathan Rotenberg of the Boston Computer Society) to a code-bashing session to delight the most experi-

enced hackers. There truly is something for everyone, no matter what your use of the Macintosh and even if you've never used one before. Programmers and developers, educators, business users, beginners and power users will all benefit from the great variety of conferences offered at MacWorld Expo. Everyone can learn how to use their Macintosh more productively and profitably. Conference experts will offer their personal opinions and experience, and in most cases there is ample opportunity for questions and discussion.

A number of key corporate executives, as well as leaders and innovators in the computer industry are scheduled to speak at the MacWorld Expo conferences. Bill Campbell, President of Apple's software subsidiary Claris Corporation, will provide an insightful look at "Success in Software: The Next Decade." Also featured among the noted conference speakers is Bill Atkinson of MacPaint fame who will demonstrate and explain the uses of Apple Computer's new Hypercard hypermedia tool kit.

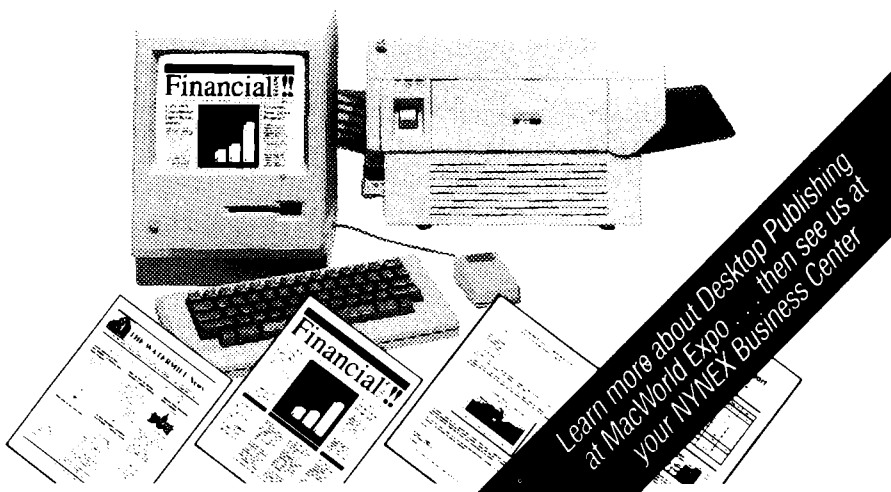
All attendees will have the chance to suggest, inquire, bicker, discuss and inform at the MacWorld Expo User Group Extravaganza. This is a large user session, held at 5:00 each day of

the Expo, which will provide a completely unbiased, knowledgeable source of information on the newest, best and brightest on the exhibit floor. Panelists include members from user groups all over the nation. The Extravaganza is a unique opportunity to gain and give Macintosh information from those who know it best — the users.

Macintosh solutions demonstrated at MacWorld Expo '87 will encompass desktop publishing, presentation and communication tools; comprehensive networking and database solutions; engineering design, analysis, and project management tools; and other business and education solutions. Exhibitor space sold out early for MacWorld Expo, but the bulk of third party vendors will be represented.

MacWorld Exposition/Boston 1987 will take place on August 11-13 at the Bayside Exposition Center, 200 Mount Vernon Street, Boston, MA. Show times are 11:00 am to 6:00 pm, with tickets available at the door. Admission to the exhibit floor only is \$15 for all three days. In order to attend the conferences as well as view the exhibits, the fee is \$40, also for all three days. Cash only, no credit cards or checks accepted. ■

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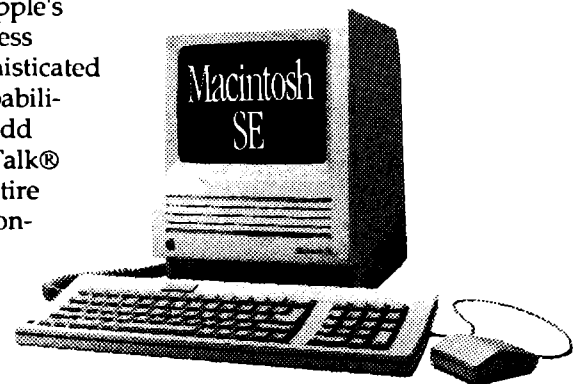
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Engineering Tools

Engineering today is a broad term that encompasses not only the traditional mechanical, electrical, and chemical engineering industries, but also architecture, pure sciences, software, and a host of others. According to the Department of Labor, there are over three million professional "engineers" in the United States' labor force today. Approximately half of these are employed at companies with more than 1000 employees, with the other half at smaller companies.

Meeting the needs of engineering professionals means more than providing engineering tools. Many of the activities required of today's engineers fall outside the realm of mainstream engineering tasks. For example, planning schedules, discussing budgets, and writing status reports are all necessary to any successful engineering project.

These duties can take as much as two thirds of an engineer's work hours. That leaves only one third to perform the actual engineering tasks of design, analysis, debugging, and perfecting. Macintosh tools today can help engineers balance their energies between support responsibilities and the mainstream of design, analysis, and implementation.

With all the tasks and types of engineers today, there is a common thread of requirements that runs through it all. These common elements are conceptualizing, visualizing, planning, writing, presenting ideas, and the ability to switch rapidly between these activities.

Managing With The Macintosh

Apple engineering solutions are based on Macintosh computers. The recently introduced Macintosh II provides power and capabilities rivaling those of many engineering workstations sold today. The power of the Macintosh II starts with a 32 bit Motorola 68020 microprocessor running at 16 Mhz for high performance. The Motorola 68881 numerics chip is standard, for processing floating point operations up to 200 times faster than previous Macintosh computers. The basic system has a megabyte of RAM, a

four-voice sound chip, and an internal 3.5" 800 Kbyte floppy disk drive. The sound chip enables the creation of four simultaneous sound streams, and is unique to the Macintosh. It can, for example, enable you to overlay sound effects on graphic images, annotate text with speech, and so on.

Working in concert with the central processor and providing extensive expansion options is the Apple NuBus. The NuBus is the "backbone" of the system, into which all required and optional boards are plugged. Maintaining Apple Computer's ease of use strategy, boards plugged into the NuBus automatically configure themselves into the system; no switches need to be set, or software changed when boards are added or removed. The NuBus provides the capability to add a variety of expansion boards, including: extended mass storage, video (for external monitors), data communications, data acquisition and control.

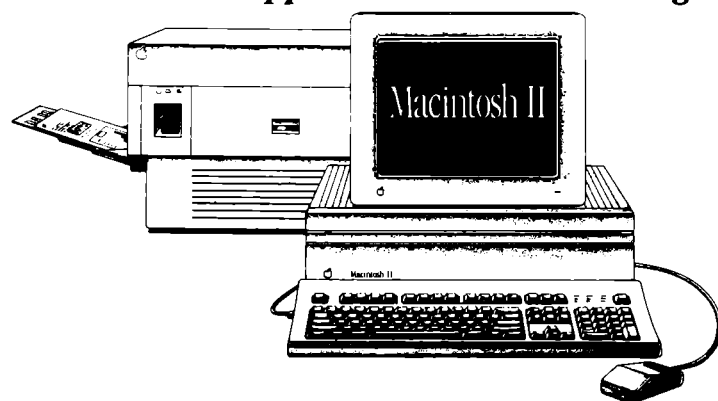
Another innovation from Apple is the Apple Desktop Bus. This bus allows the connection of up to 16 input devices without using any expansion slots. It can simultaneously support keyboards, mice, light pens, digitizers, graphics tablets and other input devices. All input devices are connected with the same ease as NuBus boards — a basic "plug it in and it works" concept.

Additional features provide the flexibility engineers need for the multiple environment world of today's computers. For those markets which require it, the Macintosh II can run UNIX and MS-DOS in addition to its own powerful operating system, simply by including the proper options. It can also emulate widely used terminals such as the Digital Equipment Corporation VT100, and Tektronix graphics terminals.

In many cases it isn't necessary to run under a different operating system or emulate a terminal, but it is necessary to communicate with other systems. To meet these needs, a wide variety of networking and communications products are available for the

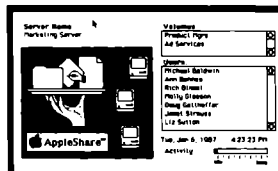
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To make these hardware capabilities work for you, software products from a variety of vendors help manage each aspect of the engineering development cycle.

Phased Engineering

No matter what the engineering discipline, most projects require six basic phases: proposal, planning, design, analysis, revision, and documentation. For proposal writing and documentation, a variety of text processing and desktop publishing tools are available and will be displayed on the show floor at MacWorld.

For text processing, Microsoft Word, MacWrite, Write Now, and MathWriter offer a variety of capabilities and ranges of sophistication. For a more sophisticated look, desktop publishing tools enhance word processing tools to include graphic design and layout. These tools include PageMaker, ReadySetGo, and Xpress.

For project planning, software packages must handle tasks such as activity and task scheduling, allocating resources, preparing budgets, and project management and tracking. Products for these applications include MacProject, Micro Planner Plus, and Excel.

Design and analysis are the mainstream of engineering functionality, and several packages are available to enhance productivity and quality in these areas. Among these are Dimensions, Versacad, and Douglas CAD/CAM for design, and Lab View, MacSpin, StatView and Parameter Manager for analysis.

Just as the original Macintosh revolutionized the home computing industry, the Macintosh II is opening a new era for engineers. The Macintosh II provides not only the necessary computing power and software, but retains the ease of use features and adds Macintosh graphic power to traditional applications. ■

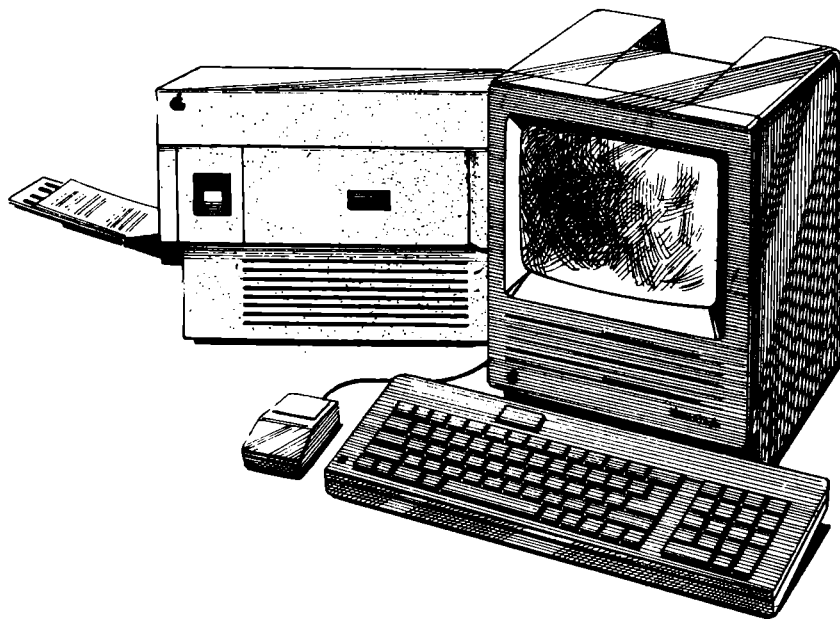
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In the Main Stream

The Macintosh product family's characteristic ease-of-learning, graphics orientation and power have contributed to the widespread acceptance of the Macintosh™ personal computer family across all sizes of business and in higher education.

Statistics show that the Macintosh is becoming a true mainstream personal computer. During 1986, monthly sales of the Macintosh doubled, bringing the total sold since 1984 to over one million units. And, according to the Cupertino, California-based market research firm Infocorp, for most of 1986 (the last 10 months of the year), the Macintosh Plus was the top-selling personal computer sold by specialty retail stores.

Furthermore, there is a wide variety of innovative software available for the Macintosh. More than 2,500 third-party application packages are now available for Macintosh systems.

Macintosh in Business

Personal computer sales are growing fastest in the business market. It is also the arena where sales are awarded not on price alone, but on value and performance. These criteria are responsible for the increasing acceptance of the Macintosh as a mainstream business machine. Today, nearly two-thirds of all Macintosh computers sold are sold to the business marketplace.

Macintosh computers are being used in all sizes of companies. According to Apple Computer's internal market research, 27 percent of Macintosh computers in businesses are used in companies with fewer than 100 employees, 37 percent are in companies with 100 to 999 employees, and 36 percent are in companies with more than 1,000 employees.

In addition, more than 70 percent of large- and medium-size newspapers in the United States use a Macintosh to help produce their editorial art. Applications range from one-column locator maps and data graphs to sophisticated explanatory diagrams, full-color weather maps, and special typographic effects. Gannett Company, Inc. alone, publisher of *USA Today*, uses 150 Macintosh computers throughout its newspaper chain.

Many companies are embracing the Macintosh because *its intuitive, consistent interface greatly reduces training costs*. One study showed it reduced such costs by a factor of eight over MS-DOS-based machines. Service companies, in particular, reap an advantage from the Macintosh computer's ease-of-learning, because this type of industry usually has large numbers of employees who are not computer-literate. To date, 51 percent of business Macintosh computers have been sold to service industries.

"Big Eight" accounting firm Arthur Young, for example, uses thousands of Macintosh computers as field systems for its audit department. Nynex Enterprises, part of the New York-based regional telephone company, uses Macintosh computers almost exclusively for its office automation tasks.

The ability for computers to communicate with each other is also extremely important in the business market. Linking the Macintosh via its built-in AppleTalk® connection to MS-DOS computers, to other networks and to virtually all mainframes and minicomputers extends the power and transparency of the Macintosh to the business workgroup.

Apple Computer's business strategy is built upon a technological foundation that consists of the Macintosh computer, communications and productivity software (third-party) upon which applications can be built. This technology is innovative, yet incorporates industry standards where they exist to provide the best solutions to Apple customers.

Macintosh in Higher Education

Since the introduction of the Macintosh in 1984, Apple has enjoyed growing success in the higher education market. Much of the Macintosh computer's popularity on campus is due to its intuitive, graphic interface, and its ease of use and learning. But a significant factor in its success also can be attributed to Apple Computer's ongoing commitment to offer higher education a comprehensive academic program that supports the use of the product and encourages schools to become active partners in developing and integrating key solutions into the campus curriculum and administrative activities.

The academic program spans such areas as offering curriculum solutions in specific disciplines, courseware development and distribution, training, service, and support that focuses on lowering the cost of campus computing through special pricing, the Apple credit card and institutional financing. In addition, Apple facilitates an exchange of information about technology and education through conferences, seminars and publications such as "Wheels for the Mind," a detailed account of computer projects and software development — a quarterly publication that has emerged as an important resource on academic computing on campuses. The exchange of information continues via AppleLink®, which is an on-line database, electronic-mail and bulletin-board system that links educators directly to Apple, colleagues, developers and dealers.

Many of these programs sprang from Apple Computer's relationship with members of the Apple University Consortium (AUC). Formed in 1984, the AUC — with member schools such as Brown University, Carnegie Mellon, Harvard, Massachusetts Institute of Technology, Princeton, University of California at Berkeley, University of Michigan and Yale — is a partnership of dozens of universities and colleges that explore innovative uses for the Macintosh personal computer, develop courseware, share information with each other and act as an advisory council to Apple.

The AUC's efforts in software development were the cornerstone of the establishment of the Academic Courseware Exchange (ACE). Administered by Kinko's Graphics, a nationwide, full-service electronic printshop chain, ACE enables universities nationwide to share courseware by distributing it in the volumes that they need and at prices they can afford. A royalty payment from ACE to university developers rewards their efforts and provides an incentive for continued development.

In addition to their software contributions, many AUC schools have adopted the Macintosh as the computer of choice on campus. Among those schools are Drexel University in Philadelphia, Pennsylvania; Dartmouth College in Hanover, New Hampshire; Drake University in Des



Moines, Iowa; and Franklin and Marshall College in Lancaster, Pennsylvania. All of these schools strongly recommend that their students purchase Macintosh computers or provide access to students through public access labs. The acceptance of the Macintosh by these flagship schools has led other schools to consider how the Macintosh family of products fits into their own campus computing environment.

• The U.S. Coast Guard Academy in New London, Connecticut, for exam-

ple, announced that beginning in July, new cadets will be required to purchase a Macintosh personal computer. The academy is moving its instructors toward increasing their use of the computer as a tool to augment other teaching methods. As the sharing of software throughout the academic community spirals, the U.S. Coast Guard Academy expects this trend to enhance its entire educational program.

• Biola University, in La Mirada, California, recently announced it will pro-

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Aug 19 Accounting 9:00 A.M.

Aug 20 Desktop Publishing 9:00 A.M.

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vide access to the Macintosh to all of its students and, over time, will require instructional use of the Macintosh across much of the curriculum.

• University of Tennessee at Memphis' Health Science Center plans to create a model "information-intensive" campus over the next three years that will provide all faculty, staff and students with unrestricted access to a computer workstation, a high-speed communications network for campus-wide electronic mail and access to other campus resources, and a central computing facility. The school has chosen the Macintosh for its ease of use, graphics, functionality and connectivity capabilities.

Apple expects that a full range of higher education personal computing needs can be met by the Macintosh family. The Macintosh Plus meets the needs of students and faculty to have a large software base and good performance at an affordable price; the expandable Macintosh SE offers flexibility for students, faculty and administrators, and the open, powerful Macintosh II, developed in response to feedback from higher-education institutions, provides faculty and students with the power needed for advanced programming, software development, simulations, research, high-speed communications, engineering and computer science.

Macintosh in Government.

The government market is attractive to Apple because it represents the country's largest employer, the largest publisher and the organization with the greatest opportunity to reduce training costs.

Input, a market research firm based in Mountain View, California, estimates the federal government alone spent more than \$840 million in 1986 on microcomputer hardware and soft-

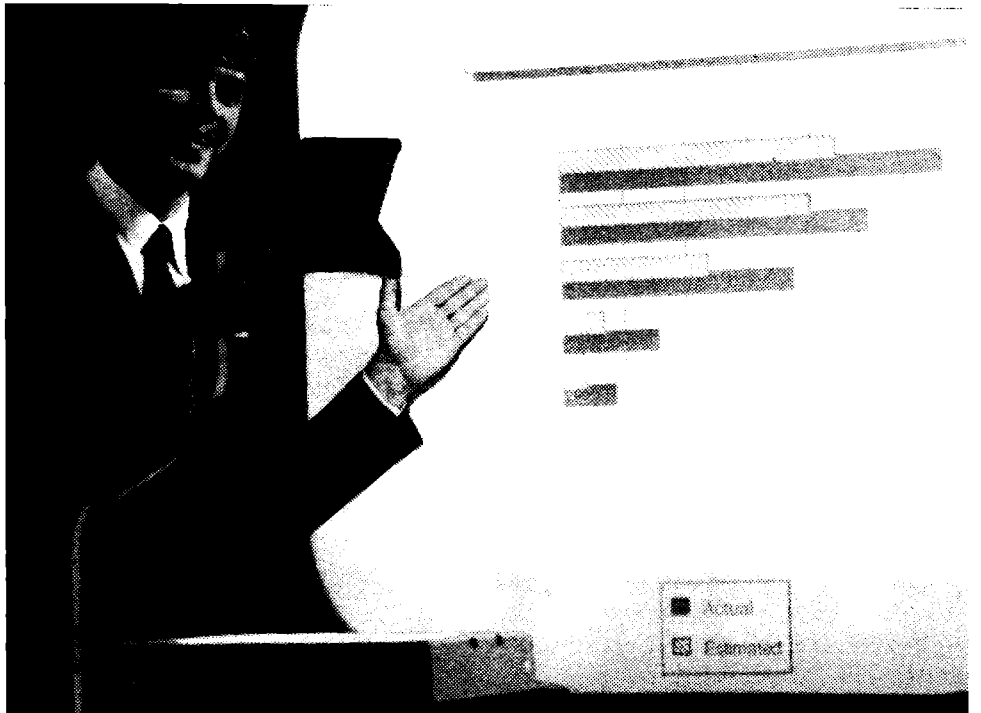
ware, turnkey systems and professional services. The firm expects this number to reach \$1.3 billion in 1991, based on an average annual growth rate of 10 percent.

In the second part of 1986, Apple made a commitment to serve the government market at the federal, state and local levels. Because UNIX and MS-DOS are standards in the government environment, the company has set a strategic directive to provide Macintosh users with compatibility and connectivity with the IBM and Digital Equipment Corporation worlds. In addition, Apple will tailor products for certain government bids and create new solutions that are specific to government needs. The company is using four distribution channels to reach all levels of government procurement — dealers, value-added resellers, system integrators and direct sales. The federal government market is served out of Apple Computer's direct sales office and executive briefing center in the Washington, D.C. area.

Apple is increasing its penetration in the government market, in state school systems and local municipalities, as well as in federal agencies and departments. For example, a version of Macintosh configured for security uses is on the National Security Agency's Preferred Product List. With growing involvement from systems integrators and value-added resellers and with expanded choices of operating systems, more Macintosh computers will be used by government organizations. 

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How effective are your presentations?



Preparing for business presentations used to be an agonizing task. Overhead slides produced in-house by copying handwritten or typewriter output onto transparencies offered quality that was far from ideal. Outside vendors specializing in 35mm slide creation provided high quality, but with the expense to match (averaging \$50 per slide). Vendors also required long lead times that offered no flexibility to make those unavoidable, last-minute changes. High cost, high quality, long lead time; or low cost, low quality, short lead time — no happy medium existed.

With the advent of the Macintosh with its combined text processing and graphics, presentation materials produced in-house suddenly began to look better, and at a reasonable cost. Instead of typewritten copy, you could output high quality text and graphics from various software packages on a laser printer and copy them onto transparencies or hand them out as hard copy.

The Market Need

Just think about it. How many presentations have you given or attended in the last year?

A 3M study has shown that some 15 million meetings, 8 million sales presentations, and 10 million classroom presentations are made every day, and that executives spend a huge percentage of their time in meetings. Another 3M study showed that visual aids significantly increase the effectiveness of presentations.

Prior to Macintosh technology, only about 10 percent of all visuals were produced via computers. Conclusion: there is a huge, mostly untapped market for fast, cost-effective, easy-to-use personal computer tools for presenters.

The benefits of such tools include, first and foremost, control of the presentation materials. This includes cost control, the flexibility to make changes that ensure up-to-the-minute accuracy, the ability to produce new presentations on a timely basis, and the assurance of continuously high-quality output.

According to Apple, the Macintosh offers an ideal platform for such tools. Apple believes the market requirements for computer-based presentation tools to include:

- Ease of configuration, installation, use, and maintenance;

- The ability to access information from various locations and applications;
- The ability to access the skills of graphics professionals;
- The ability to integrate presentations with collateral materials; and
- Easy access to a variety of output options.

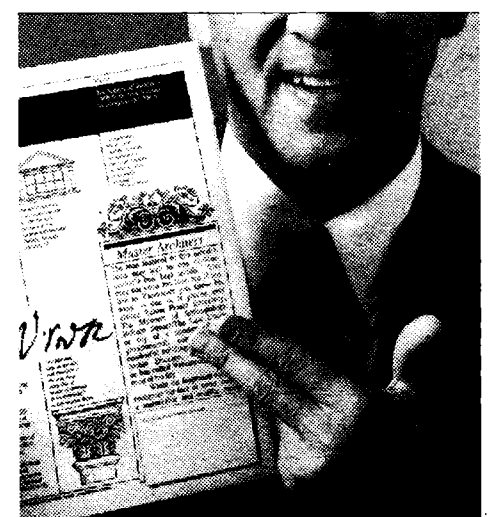
Apple Computer's belief in the Macintosh as a desktop presentation platform is verified by research among its customer base. Of business Macintosh users, 15 percent view presentations as their primary application, and 60 percent count presentations among the uses of the Macintosh.

What You Need Is What You Get

Several Macintosh tools are already available in the growing desktop presentation market. Forethought Inc. of Sunnyvale, Calif. offers a desktop presentation program that is considered by Apple to be the first of its kind for the Macintosh. Called PowerPoint, this program is custom designed for frequent presenters who need to quickly design and organize slide presentations.

Living Video Text offers another solution, known as MORE. MORE allows an easy evolution from outline form to a complete presentation. Both of these packages allow output on the LaserWriter for hardcopy handout or copying onto transparency. Both are also compatible with the ImageMaker from Presentation Technologies, which uses the images from the Macintosh screen to create 35mm slides.

For business environments where multiple users require frequent creation and update of presentation materials, the Macintosh computer provides the platform for a variety of solutions, with more exciting products to come. ■



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Competitive Challenges

Can IBM slip through the window? Will customers wait for IBM?

IBM's April 2 unveiling of a new line of personal computers and desktop publishing system begs an answer to at least one question: Can IBM slip through the desktop publishing window?

Look at IBM's new announcements: Four personal computers priced from \$1,695 to \$10,995. A desktop publishing system. A new operating system. New floppy disk drive standard. New graphics standard. New bus architecture. All these come on the heels of its announcement that IBM would support PostScript.

What does all this mean?

Good news for Apple

With its attempts to emulate the capabilities of Apple products, IBM has confirmed to an entire world of MS-DOS users that Apple Computer's desktop publishing strategy has been best all along. Sales of Apple systems should benefit from IBM's entry because while IBM is increasing market awareness of desktop publishing, its announced products aren't quite what they seem.

Limited solution

IBM's standalone SolutionPac is the company's first stab at a turnkey desktop publishing system. It won't be available, however, until the third quarter of this year. SolutionPac is a bundled system built around IBM's low-end new computer, the Model 30 (based on the 8086 chip). Though using the low-end model, at \$8,995 it still costs more than the Macintosh™ Plus/LaserWriter system.

It's also a limited solution. First, IBM is offering only *one* solution while Apple offers an entire family of solutions. And even when IBM's desktop publishing system is available, it won't be able to deliver the performance or capability of a Macintosh-based system.

Second, IBM has incorporated Microsoft Windows as its operating environment (another nod to Apple Computer's leadership), but it still faces the problem of integrating information from a variety of application programs and operating systems. Since desktop publishers often draw information from a number of sources, integration is a critical element in any desktop publishing system. Macintosh offers the only consistent interface that permits easy integration — and is likely to do so for some time.

Lack of Standards

IBM users still don't have a clear path for operating systems. They must contend with three versions of DOS, three versions of Windows, and five variations of OS/2. What's more, with a new bus and connectors, the new models won't accept any of the peripheral devices that work with current IBM products.

Also, IBM is trapped by its choice of Intel architecture into multiple levels of incompatibility. None of the Intel chips IBM is using in its new computers is fully compatible with previous systems, which makes development and support difficult. By contrast, Apple Computer's use of Motorola chips allows it easily to adopt 68000, 68020, and 68030 chips and to maintain a higher level of software compatibility.

Much of IBM's new hardware capabilities relies on the new Operating System/2, which won't be ready until early 1988. After that, it will be months, perhaps a year, before new software can take advantage of the new IBM hardware — and then with first-generation programs. If IBM does eventually offer the capabilities Macintosh has available today, Apple Computer's CEO, John Sculley, asks, "Where do you think we'll be by then?"

"IBM has a long way to go to get where the Mac is now."

Eugene Glazer Dean Witter Reynolds 4/2/87

While IBM courts third-party developers to create first-generation software, Apple already offers both depth and breadth of desktop publishing applications. By the time IBM introduces first-generation programs for OS/2, Apple will be on its third- and fourth-generation solutions.

Hidden costs

Unless IBM's pricing strategies change, Apple will remain more cost effective. For example, IBM's new Personal Page Printer looks attractive enough to begin with, though at 6 pages per minute it's 25 percent slower than the LaserWriter. It's priced at \$2,199, several hundred dollars below the HP LaserJet and \$2,250 below the LaserWriter Plus. But \$2,199 just buys the basic hardware. It's useless without a controller board, which runs \$1,950 *per user*, and a Page Printer Adapter Program, \$850 *per user*. The real price of IBM's printer is \$4,999 *per user* — with apparently no sharing or networking capabilities. The cost of a LaserWriter can be shared by several users linked via the inexpensive, easy-to-install Apple-Talk® Network.

Golden opportunity for Apple

While IBM creates the products it announced on April 2, the window to desktop publishing markets has opened even wider to Apple resellers. Here's why:

- IBM won't have products that take advantage of OS/2 until 1988-89.
- Its standalone publishing system, not available until the third quarter of 1987, can't match a Macintosh-based system for capability, performance, or cost effectiveness.
- IBM's desktop publishing system isn't well integrated. While IBM customers look for ways to integrate applications and software from different environments, Apple customers will enjoy a straightforward, ready-to-go desktop publishing solution.
- IBM is targeting only one area of desktop publishing — page layout. It's avoiding the very healthy opportunities in artwork and illustration, document processing, and presentations.

With Apple Computer's technology platform, depth and breadth in desktop publishing, cost-effective workgroup solutions, and consistent interface, Apple resellers still have the best solutions to offer — and will have for some time to come. ■

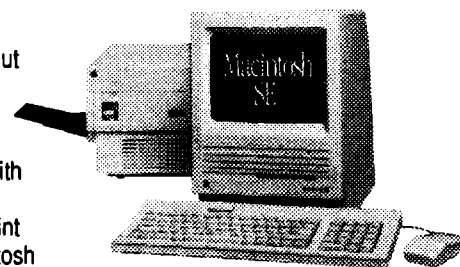
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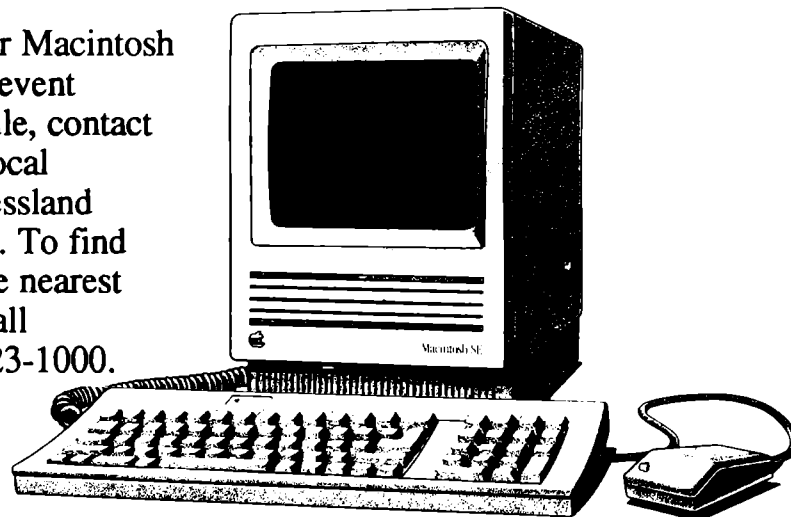
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Find Out What's Going On Between Apple And IBM.

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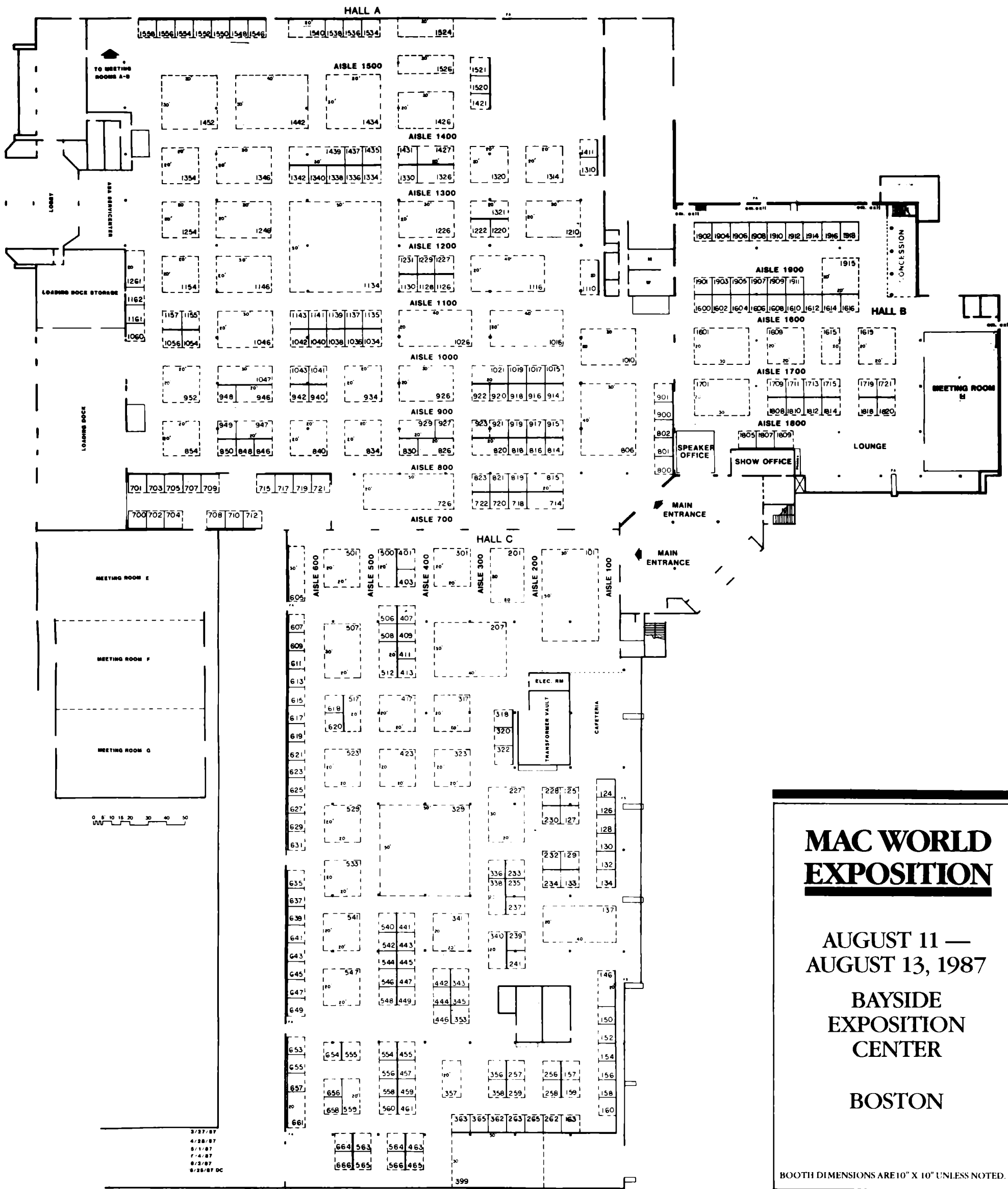
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MAC WORLD EXPOSITION

FLOOR PLAN



MAC WORLD EXPOSITION

EXHIBITOR'S LIST

	Booth #		Booth #		Booth #		Booth #
1st Aid Software, Inc.	700	Erez Anzel Software	923	Nantucket Corp.	547	Sensible Softworks	1902
1st Desk Systems, Inc.	917	Ergotron, Inc.	1021	National Association of		Shana Enterprises, Inc.	1608
3Com Corp.	1010	F.C. Brooks & Co.	1157	Desktop Publishers	1040	Shiva Corp.	1041
A.P.P.L.E. Co-op/Mac A.P.P.L.E.	263	Farallon Computing, Inc.	820	National Instruments	815	Sigma Designs	1314
A.P.D.A.	265	Ferranti-Dege, Inc.	927	NCR Microelectronics	129	Silicon Beach Software, Inc.	1047
Aba, Inc.	819	Fifth Generation Systems	1915	Network Specialties	658	Simulated Environment Systems	1910
Abaton Technology Corp.	840	Firebird Licensees, Inc.	1254	New Directions Software/		Softsync	609
Abvent	703	Forethought, Inc.	1246	Imageclub Graphics	1610	SoftView, Inc.	814
Accessories Plus	232	Foundation Publishing	559	New Image Technology, Inc.	656	Software Complement	1808
Acius, Inc.	1435	FWB Software, Inc.	705	Northeast Data Processing Supplies, Inc.	619	Software Discoveries, Inc.	1411
Addison-Wesley Publishing Co.	1601	General Computer	1026	NuDATA	343	Software Power Co.	154
Adobe Systems, Inc.	317	Great Plains Software	816	Odesta Corp.	1016	Solutions Int'l.	544
Advanced Computer Graphics	1330	Great Wave Software	1427	OfficeTalk, Inc.	443	Spectra Blue Assoc.	501
Advanced Elec. Support Prod., Inc.	1521	Greene, Inc.	1015	Olduvai Software, Inc.	641	Spectrum Digital Systems, Inc.	1719
AEC Management Systems	702	GWACo	128	Opcode Systems	353	Spectrum HoloByte	1552
aesthetics technology	125	Hard & Soft, Inc.	234	Orange Micro, Inc.	523	Springboard Software	401
Affinity Microsystems, Ltd.	1126	Hayes Microcomputer Products, Inc.	1226	Palantir Software	1334	Star/Monogram	1141
Aldus Corp.	1442	Heizer Software	506	Panamax Line Conditioning	901	Strawberry Tree Computers	446
ALSoft, Inc.	802	Hewlett-Packard Co.	137	Para Systems, Inc.	262	SuperMac Technology	1434
Altsys Corp.	239	High Performance Systems	1231	Paragon Concepts, Inc.	1220	Symmetry Corp.	1431
Americal Group	1912	Howard W. Sams & Co.	1110	PC Telesystems	565	Synapse Software	501
Anatex, Inc.	459	Hub Disk Computer Products, Inc.	1721	PCW COMMUNICATIONS, INC./		SYSTAT, Inc.	654
Ann Arbor Softworks, Inc.	336/1346	Human Intellect Systems	159	Macworld and Publish! Magazines,		T/Maker Co.	1017
Apple Computer, Inc.	329/399/1134	I/O Design, Inc.	916	MacintoshToday	806	Tacklind Design, Inc.	441
Ashton-Tate	227	ICOM Simulations, Inc.	1321	PEAK Systems	341	Target Software	1116
AST Research, Inc.	301	Icon Review	1604	PerfecTEK Corp.	365	Tecmar, Inc.	124
Automated Language Processing Systems	1906	IDAC, Inc.	455	Peripheral Land	1600	TeleRobotics Int'l., Inc.	257
Automatix, Inc.	1616	Infosphere, Inc.	929	Peripheral Systems, Inc.	821	Telesis Educational Systems, Inc.	1615
Avantec, Inc.	718	InfoWorld	1320	Personal Bibliographic Software, Inc.	818	TeleTypetting Co.	230
BAKERForms	566	Innovative Data Design, Inc.	407	Personal Computer Peripherals Corp.	1146	The Boston Computer Society	146
Bantam Electronic Pub.	657	Intelitec Systems Corp.	647	Personal Training Systems	403	The CAD/CAM Journal for	
Baudville, Inc.	1905	Internet/Interactive		PIM Publications, Inc.	717	Mac Professionals	709
Bering Industries, Inc.	517	Network Technologies, Inc.	1227	PixeLogic, Inc.	1612	The Computer Museum	645
Berkeley Macintosh Users Group (BMUG)	1536	Invention Software Corp.	607	Postcraft Int'l., Inc.	558	The Imagesetter, Inc.	620
Blackhole Technology, Inc.	921	Invision, Inc.	715	Practical Computer Applications,		The Laser Connection	1526
Blowhard Industries	801	Jasmine Technologies, Inc.	541	Inc. (PCAI)	237	THE MACazine	1609
Blyth Software, Inc.	726	Kensington Microware	512	Presentation Technologies	1713	The Macneal-Schwendler Corp.	826
Bogas Productions	158	Kent Marsh Ltd.	1054	PRIAM Corp.	156	The Madson Line	508
Boston Publishing Systems, Inc.	605	Kevin J. Doyle Computer		Primera Software	563	The Rest of Us	653
Bravo Technologies, Inc.	802	Systems Consulting	501	Pro Plus Software, Inc.	357	THINK Technologies, Inc.	1046
Broderbund Software	444	Kinetics, Inc.	627	Prometheus Products, Inc.	1155	Tomoe Trading, Inc./Hi-Tecs Co., Ltd.	501
C.I. Tech Int'l., Inc.	800	KMW Systems Corp.	714	Psy-den	1809	TPS Electronics	1139
Cambridge Electronics, Inc.	649	Kroy, Inc. (Sign Systems Div.)	1550	Publishing, Ink.	1901	Typesetting Service	1042
Capilano Computing	823	Language Processors, Inc. (LPI)	623	Quark, Inc.	1261	UNICOM	947
CasadyWare, Inc.	914	Language Systems Corp.	949	Radius, Inc.	1439	UpTime-Viking Technologies	719
CE Software	1043	Laser Designs Corp.	1908	REALITY TECHNOLOGIES	133	VERBUM	712
Center Digicalc	126	Laserware, Inc.	1326	Redgate Communications Corp.	848	Versacad Corp.	423
Centram Systems West, Inc.	1354	Layered, Inc.	926	Relax Technology, Inc.	1701	Vision Technologies	1805
CHA Services, Inc.	1056	Letrasat USA	101	RibbonLand	631	Washington Apple Pi, Ltd.	163
Chang Laboratories, Inc.	1421	Levco	834	Rodime, Inc.	1210	White Pine Software, Inc.	720
Circo Business Solutions	726	Living Videotext	529	Satori Software	233	WhizzardWorks™	228
CMS Enhancements, Inc.	554	LoDOWN	1338	Scott, Foresman & Co.	613	Williams & Macias, Inc.	830
Cognition Technology Corp.	235	Logic Array/ProAPP	1619	Second Wave, Inc.	940	WordPerfect Corp.	507
CompServCo	1135	Logic eXtension Resources	1310	Select Micro Systems, Inc.	555	Working Software, Inc.	1036
Compu-Teach Corp.	625	Logical Operations, Inc.	1606	Semantic Microsystems	564	ZEDCOR, Inc.	127
CompuCover	722	Lotus Development Corp.	1154				
Compugraphic Corp.	1909	Lundeen & Assoc.	411				
CompuServe, Inc.	132	Mac AD/C	501				
ComputerWare	1452	MAC LTD.	130				
Computer Currents	1810	Mac Orchard	363				
Computer Expressions	1546	MacBriefs	259				
Computer Friends, Inc.	445	MacCable	442				
Computer Shoppe	241	MacGuide Magazine	1812				
Computers, Etc.	1524	MacMemory, Inc.	918				
COMTrex, Ltd.	1558	MacNet Communications	664				
Contact Systems, Inc.	666	MacroMind, Inc.	1818				
Coral Software	1903	Macropac Int'l.	157				
Cortland Computer	948	MacTimes, Inc.	1914				
Creative Solutions, Inc.	621	MacTutor	1034				
Crickit Software, Inc.	854	MacUser	1060				
Data Tailor, Inc.	533	MacWEEK	356				
Datacopy Corp.	661	Mainstay	1130				
DataDesk Int'l.	256	Manx Software Systems	611				
DataSpace Corp.	934	MENU	1907				
DataViz, Inc.	548	Mergenthaler Linotype	635				
Dayna Communications	201	Meta Software Corp.	946				
DCM Data Products	655	Micah Storage Systems, Inc.	447				
DEI (Data Electronics, Inc.)	707	Micro Dynamics, Ltd.	1556				
DEST Corp.	1426	Micro Planning Int'l.	846				
Digital Communications Assoc.	708	Microfinancial Corp.	637				
Digital Etc., Inc.	1342	MicroGraphic Images Corp.	320				
Diversified I/O, Inc.	546	Microsoft Corp.	207				
Douglas Electronics	362	MicroStore, Inc.	1222				
Dove Computer Corp.	952	Microtech Peripherals, Inc.	1709				
Dynamac Computer Products, Inc.	340	Microtek Lab., Inc.	500				
Dynamic Graphics, Inc.	1540	MicroTouch Systems, Inc.	1904				
E-Machines, Inc.	540	Migent, Inc.	615				
E.I. duPont de Nemours & Co., Inc.	1534	Miles Computing	618				
EDUCOMP Computer Services	915	Mindscape, Inc.	417				
Ehman Engineering, Inc.	701	Mirror Technologies	323				
Enzan-Hoshigumi	1548	Monitem Corp.	463				
Epic Technology, Inc.	942	Mystic Valley Research, Inc.	1916				

How to get started
when you don't know where.



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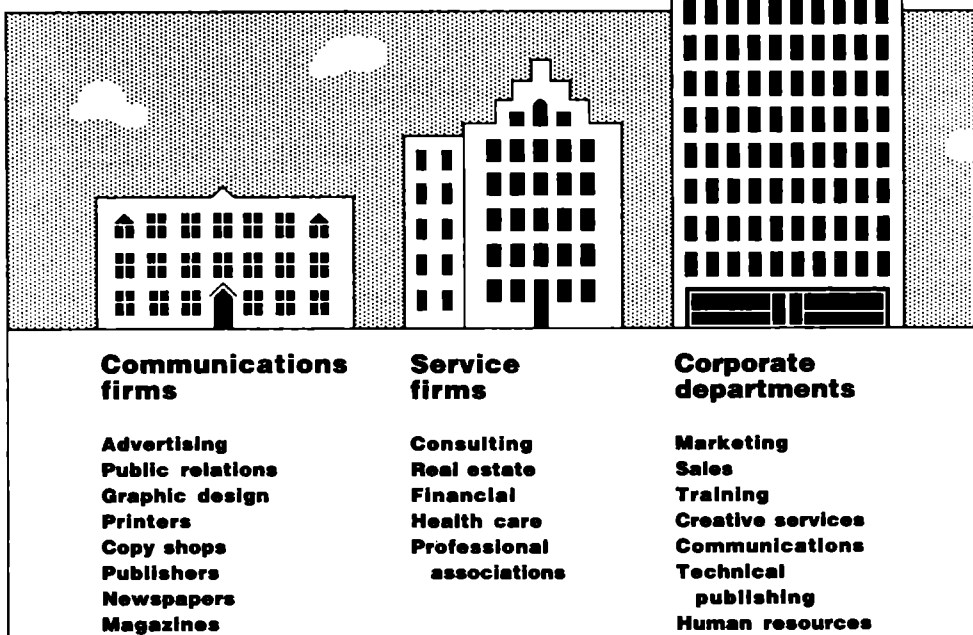
Desktop Publishing In 1987

Early in 1985, Apple and its partners perceived a clear market need: more effective business communication. Business people wanted high-impact graphic communications, but found the desired high quality, available only through the services of graphics experts, to be expensive in terms of time and money. In response, Apple, its developers, and resellers built the desktop publishing market from a standing start. Just two years ago, the term *desktop publishing* was unknown.

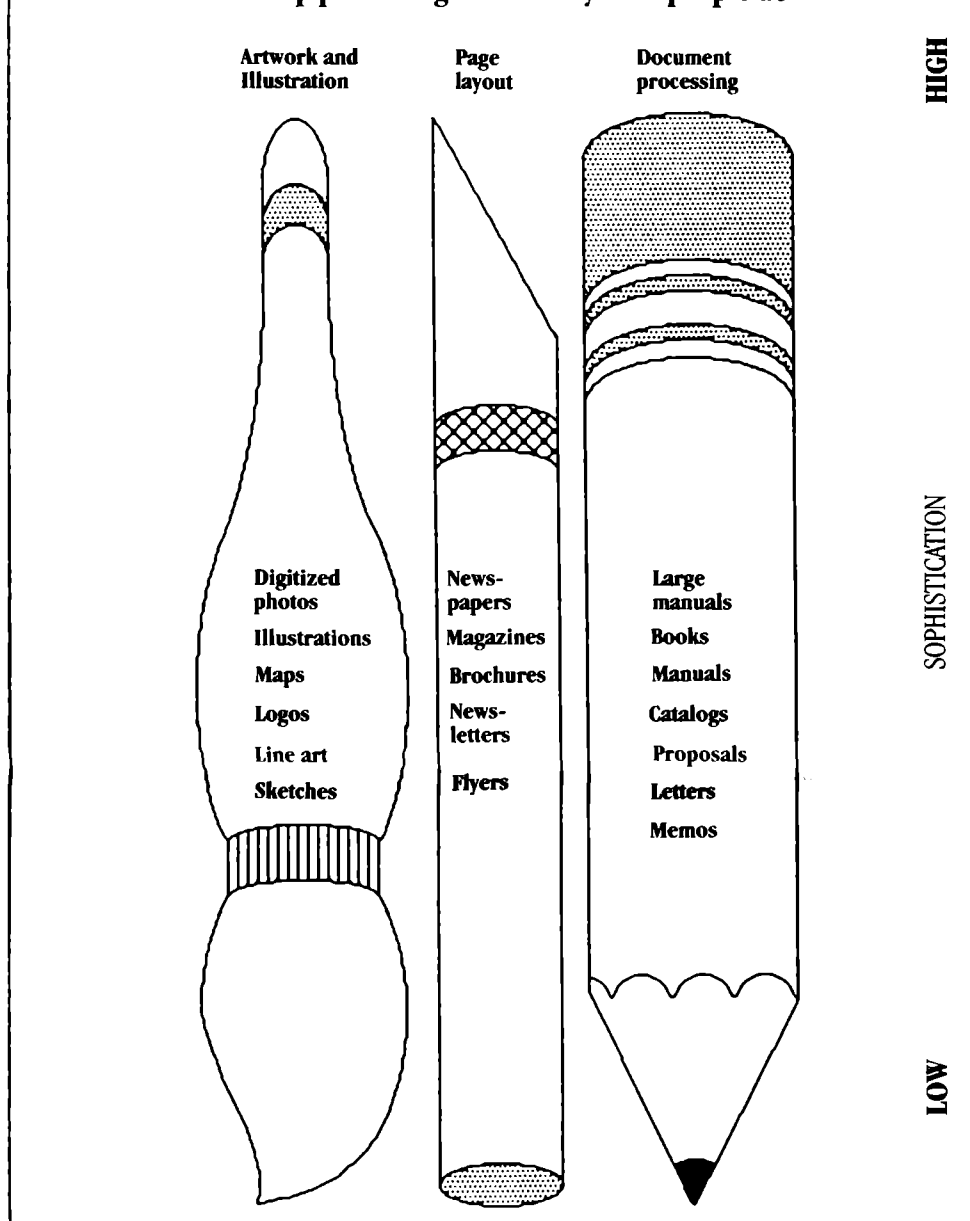
Macintosh Plus computer, LaserWriter® printer, and AppleTalk® network, in combination with innovative software and peripheral devices, are unbeatable. Apple started designing graphics systems in 1980. From the beginning, Apple has focused on making technology work for people by developing human interfaces that make systems easy to use and support. John Sculley articulated this in his keynote address at the Macworld Exposition: "Apple is committed to bringing high technology to the lay person."

In 1986, Apple made desktop pub-

Target markets for desktop publishing in 1987



Desktop publishing is driven by what people do



Partners in solutions

At Apple, partnership is the way of doing business. Apple supplies the enabling technology and then encourages developers to build on that foundation. Apple continues to work closely with developers to create a range of hardware and software solutions for artwork and illustration, page layout, and document processing. In 1987, you'll see the range of products become more sophisticated and varied as Apple expands the desktop publishing market.

Team experience

Customers and analysts indicate that Apple Computer's commitment to desktop publishing and its resellers is paying off. By 1986 desktop publishing was already creating several hundred million dollars a year in business.

Industry analysts predict that by 1990 the market will exceed one billion dollars in annual sales.

That market growth is a confirmation of the vision of Apple, its developers, and its resellers, who took the risk to invest in their vision and succeeded. Apple is continuing its commitment to support its resellers in expanding the market.

An applications-driven market

The desktop publishing market is driven by specific application needs. It is what people do that is important, not whether they are in a small or large company. The tasks themselves can be grouped into three categories: artwork and illustration, page layout, and document processing.

The movement is toward ever-increasing sophistication: Desktop

con't page 11

Since that time, the Macintosh™ system has grown from an underpowered start to the most complete desktop publishing solution available.

Today, "Dollar for dollar, the Apple® desktop publishing system is...the best-configured system for desktop publishing," declared *Personal Publishing* in naming the Macintosh desktop publishing system the "Publishing System of the Year."

Leading the market

Apple knows that it takes four things to lead the 1987 desktop publishing market:

- a broad vision of how to move from today's desktop publishing to the ideal of the "intelligent document"
- a great graphics hardware and software foundation
- third-party development of solutions around that foundation
- reseller and marketing experience to bring markets and solutions together

Apple plans to capitalize on these four factors to maintain and expand its market leadership.

The best foundation

Apple-based systems will offer the best solution foundations in 1987. The

publishing and desktop communication its top development priorities. Already, important results have appeared. *Personal Publishing* presented designers of desktop publishing systems with a challenge: "[The Apple system] is the one to beat. ...On a pure hardware level, Macintosh, AppleTalk, and the LaserWriter are going to be hard to surpass." When improved solutions are developed, you can be sure that Apple will maintain and extend its lead in desktop publishing because of its commitment to innovative technology that puts desktop publishers in control of their products.

Apple believes desktop publishing's ultimate purpose is to help people put information to work. This means helping people generate "intelligent documents" that

- have the right information, whether it's from the creator or a coworker or whether it resides on mainframe or personal computers
- are timely
- make information easy to understand through superior typography, graphics, and integration of text and graphics

Our Desktop Publishing Seminar Is Free—If You Are

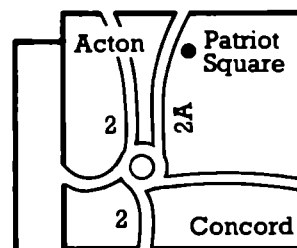
Got a couple of hours to spare on Tuesday, August 25th at 1:00 p.m.? Join us for a free Macintosh™ Desktop Publishing Seminar. (Refreshments will be served.)

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Authorized Dealer

publishers want more capability. Yet solutions must remain cost-effective.

Many people initially equate desktop publishing with "layout." Developers are strengthening page layout capability with software like PageMaker 2.0 and Ready,Set,Go! 3. These second- and third-generation programs deliver magazine-level layout power. They can handle hundreds of pages, they automate tedious tasks such as hyphenation and kerning, and they allow sophisticated text block shaping and placement.

But desktop publishing also includes artwork and graphic design. New tools such as Adobe's Illustrator and Cricket Software's Cricket Draw extend the range of Macintosh solutions to meet graphic artists' needs. This new software lets illustrators exploit the full resolution of PostScript-driven output devices. Finally, desktop publishing provides

a means for sophisticated text generation. Superior products like Microsoft Word 3, T/Maker's WriteNow, and WordPerfect are defining a new category of software called "document processing." So named because the focus is on documents, not words, these new products take ideas from conception (with outline capabilities) to completion (with page layout functions). This software expands the market to professionals writing complex documents, proposals, manuals, and reports.

Solutions selling

Apple offers people the tools to solve common publishing problems. It isn't hardware and software that people want, but solutions. Only by concentrating on needs is it possible to customize a desktop publishing solution and add another success story to the Apple ranks. ■

4th Dimension Database

4th Dimension is a new, full-function database designed specifically for the Macintosh. A database is a program that lets you easily organize, store, and retrieve data. 4th Dimension is especially easy to learn and use because it utilizes the full range of Macintosh graphics, color, and networking features.

With the Macintosh and 4th Dimension, you can actually see how the database is organized. Most database programs are "hidden" from the user; there is an interface for inputting programs and outputting reports, but there is no way to actually see the data as it is stored in the database. 4th Dimension uses Macintosh graphics to show you how your database is organized. This is extremely useful because 4th Dimension is a relational database.

4th Dimension Relates To Data

A relational database organizes data in tables, with the data in each row and column functionally related. Among the advantages of a relational structure are flexibility and ease of use. Because the data is arranged in tables, data items can be added to or removed from existing tables without disturbing other data items. Entire tables can likewise be added or removed without affecting other tables. This differs from other database structures where removal of data items may require changing the database structure to retain access to other data items.

The tabular structure itself is simple and understandable; this makes applications easy to learn and use. An example of a relational database application is a personnel structure for a small company. In this case, a table might be named "Employees" and list employee information. The rows in that table would list different employee data items, such as employee number, department code, salary, start date, and title. The columns would contain the data items for each employee. In this table, the data items within each column would be related because each column would reference one employee. Each row would contain the same type of data item, such as title, for different employees. Thus, each table contains data that is functionally related.

Just as the rows and columns in

each table contain related data, each table in the database can also be related. In the Personnel structure example, a second table might list department information, such as department name, department code, and budget. Because the employee table lists department codes for each employee, it also contains a row of department codes. The department table could thus be "linked" to the employee table via the common item, "department code." These links allow the database to answer a question such as, "Which employees work in department number 100?" More complex questions, such as, "Which employees with start dates before January 1987 work in department 100?" are likewise managed by the system through links.

Applications Large and Small

4th Dimension can store up to 99 tables of data, each containing up to 511 data items. Each data item can have its own format, including names, numbers, and even pictures. Eight data formats are available, and can be mixed within the table. Attributes such as "required field" can also be designed into the database. So the employee file might contain required information such as employee number, as well as optional information such as birthdate. With the ability to store pictures, one data item might even be a map showing the location of the employee's office.

In addition to its own storage capabilities, the Macintosh and 4th Dimension can access information in other systems. Two Macintosh systems utilizing 4th Dimension can exchange data. Or, the Macintosh can be connected to a larger system, acting as a front-end to a minicomputer or mainframe. 4th Dimension can also communicate with other types of programs, and with peripherals.

More Powerful Than A PC Database

4th Dimension provides more power and functionality than any other personal computer database on the market today. It is designed to manage large, sophisticated database applications with an absolute minimum of user effort and no prior training. Flexibility and a variety of features make it suitable for a wide variety of applications. For any application involving data management that requires flexibility and power, the Macintosh and 4th Dimension can provide a solution. 4th Dimension is a product of Acius, Inc., and will be demonstrated at MacWorld this week. ■

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Macintosh in Desktop Communications

Desktop communication is Apple Computer's term for the products and methodologies used to connect its computers to each other, to other vendors' equipment, and to proprietary and public networks. Apple has applied a solution-oriented strategy to the development of its desktop communication tools. It focuses on providing tools for people to work together in groups, and to access and leverage a variety of information systems.

In developing this strategy, Apple perceived that the industry had focused on connecting wires, rather than on what people needed accomplish through the connections. Apple therefore emphasized solving real-world information and communication problems throughout the development of its desktop communication products.

Apple provides tools that help people who *work* together, to work *together*. Such tools promote a joining of ideas, using communication to improve productivity. Apple believes that the quality of connectivity, as determined by acceptance, use, and benefit to customers, is as important as the functionality. Apple designs desktop communication products first for quality and functionality, and then evolves those products for performance.

To attain this goal, all the desktop communication products have certain characteristics. Apple believes that networks are much more than cables and telephone lines. A network should act as the invisible thread that weaves throughout business communication. It should encourage development of additional productivity products, while providing solutions to existing problems.

A Framework For Communication

To ensure that its products would contain these vital characteristics, Apple created a Communications Framework under which all desktop communication products are developed. This framework is made up of building blocks which together provide consistency, integrity, and usability for its products.

Because people being able to use these products is the most important element, the framework begins with a consistent user interface that encompasses a graphical display of information and the capability to integrate data across applications. While this user interface is an integral part of all Macintosh systems, whether used alone or in networks, it is particularly important in network applications. Apple research confirmed that if communicating on a network is cumbersome and involves significant learning, people just won't do it. Apple therefore emphasizes transparency between local and remote applications.

The second element in the Communication Framework is the AppleTalk Network Architecture. To meet the goals of integration and continuing productivity, AppleTalk is an open architecture with published standards. This allows developers to innovate while retaining compatibility, resulting in a wider range of products.

AppleTalk utilizes a layered architecture, which means that different network functions are managed by different pieces of software and hard-

ware that all work together. This is common in many popular networking schemes because it means that layers can be enhanced and changed independently of each other. This makes it easier to add features, and promotes continuous improvements throughout the network.

The third element of the Communication Framework is a printing architecture. Apple determined that people need the ability to easily create combined text and graphic images on a high-resolution display, and output on printers or plotters exactly the same image that appeared on the display. This is the "what you see is what you get" philosophy. These first three building blocks, Macintosh, AppleTalk and the printing architecture became the basis for the desktop publishing industry.

The next three elements of the communication framework are now becoming available through new products. These elements are Information Sharing, Internetwork, and Integration with MS-DOS PCs. Products that focus on these three areas promote information sharing between people in workgroups, between various types of network architectures, and between Macintosh and MS-DOS based PC products. The AppleShare file server is one of the new products that brings these three framework elements to life and will be demonstrated at the Macworld Exposition.

Communication Products For Productivity

In designing its networkings products, Apple looked closely at the information and communication problems encountered by its customers. The result was the identification of five information and communication problems to address: *sharing information in workgroups*, *multiuser information management*, *integrating and enhancing MS-DOS information*, *integrating and enhancing company mainframe information*, and *timely access to information services*. Apple communication products are designed to solve these problems — not simply connect computers.

Sharing information in workgroups refers to a group of people who must share their individual work, such as circulating documents for review. Products such as the AppleShare file server and InBox mail server running on an AppleTalk network allow project teams to access and share information electronically, while maintaining data security and confidentiality. Research shows that up to 30 percent time savings can be realized through these products.

Multiuser Information Management also involves a workgroup and information sharing, but revolves around updating and managing a common set of data on an ongoing basis. These applications typically utilize a database such as Helix or Omnis, or an accounting system such as Great Plains.

Integrating and Enhancing MS-DOS Information allows Apple computers to connect to and share information and resources with MS-DOS PCs. Macintosh computers and MS-DOS PCs can share the Apple LaserWriter and exchange messages. Data in MS-DOS PCs can be transparently transferred to a Macintosh where it can be used with unequal and powerful Macintosh applications. This capability also leverages existing investments in MS-DOS-based systems. *Integrating and Enhancing Mainframe Information* extends these capabilities to minicomputers, mainframe computers. Macintosh computers can connect to DEC, IBM and many other large systems.

Timely Access To Information Services provides access to the wealth of data located not only outside the workgroup, but outside the company. With a modem and Macintosh software such as Microphone you can transparently and even automatically dial up Information Services such as Dow Jones for the latest news in your industry. These products greatly extend Macintosh power while retaining the standard user interface for maximum productivity.

With these tools, Apple provides a revolutionary, solution-oriented approach to the networking and communications concept. Each tool is easy to use and fits naturally into the work environment. The most sophisticated tool in the world provides no value if people don't use it. Therefore, Apple leverages capabilities already in

place while providing an open network architecture for new products. The result is a major contribution to productivity throughout the office environment. ■

Apple at Work

Apple Computer's position in business markets continues to grow because the Apple® desktop publishing system — featuring the Macintosh™ computer, Apple LaserWriter® printer, innovative software, and peripherals — offers economical and troublefree entry, ease of learning, efficient networking, and high-quality results. The Apple business market breaks down into three major areas: communications firms, service firms, and corporate departments.

Communications firms

Communications firms "get the word out," whether in print or by broadcast. Specialists in communication have one important concern in common: turnaround time. Their products must be on the air, on the newstand, or in the mail on schedule.

Selling points for communications firms

- in-house control over deadlines
- fast return on investment
- complete solution including scanning and typesetting options
- design flexibility

Nonprofit TV station

Applications: Proposals, flyers, brochures, forms, illustrations, books, program transcripts

The senior designer has this to say about the TV station's desktop publishing system. "I like the fact that I can use one computer for text, graphics, and database management. I also like the repeatable accuracy. It's nice to be able to make a complex drawing that we can use again and again, and that we can customize quickly for a variety of applications."

"I can now take on the jobs of three people: the designer, typographer, and pasteup artist. I can create much more

con't page 13

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con't from page 12

What's working in desktop publishing

elaborate high-quality documents in less time. Desktop publishing adds an elegance to the document that I wouldn't attempt with traditional methods."

Daily newspaper

Applications: Illustrations, maps, line art, sketches

For the science section of this newspaper, the Macintosh has a special use. The daily weather map, "an incredibly complicated drawing," is created on a MacDraft template.

"The Macintosh has allowed us to do things that we would never have tried before," says the science art director. "I can now do things that I would have hired a freelance artist to do. One person can now handle two or three jobs simultaneously. The Macintosh allows you to do a lot more."

The Macintosh "enables you to learn more programs than you would have learned with a nonvisual computer."

Community magazine

Application: Magazine

For this family-owned and operated business, the Macintosh desktop publishing system offers three great advantages. Ease of use is the first. "On the Macintosh, all the commands are right there on the screen." The second is cost savings. "The Mac has helped us cut publishing costs tremendously. It used to cost us over \$1400 a month to typeset the magazine; now it costs less than \$100." And the third is increased flexibility. "Whereas changes to the layout used to take us two or three days, we can now make the changes right away. The increase in flexibility is tremendous."

Author of eleven books

Application: Books

This author — who considers himself "a writer who can design somewhat" — says, "I correlate writing and design in anything I do. For example, I'm always trying to make each two-page layout convey a different message, using text and graphics that work together."

"After writing several books, I recently made the jump to word processing, from using a typewriter. Making the next jump to using MacWrite™ was as significant. With the Macintosh, my writing is so fluid that creativity flows even more freely. And the Macintosh is so easy to use, the computer doesn't get in the way of my writing. Instead, the Macintosh has motivated me to write more."

"Before using the Macintosh, writing a book took me about a year. I finished the recent book on football in four months, because of the Macintosh. For example, the football play diagrams, which take the NFL hours to create with traditional cut-and-paste techniques, took me a few hours."

Service firms

Any company that sells a service depends on its image and on its reputation to bring in new clients and to keep the old ones coming back. Often, the client's first impression of the firm is from written materials and graphics that advertise the service — flyers, brochures or newspaper ads.

Selling points for service firms

- near-typeset quality at word processing prices
- integration of text and graphics

- complete solution with growth options
- ease of use (minimum training)

Architectural firm

Applications: Proposals, brochures, illustrations

This architectural firm uses its Macintosh computers in every aspect of its business.

One of the partners explains, "Using standard proposal drafts stored in the Macintosh, we can customize client proposals quickly. In fact, we are able to generate a proposal in two days on the Macintosh, versus one week using other typesetting equipment. Besides, we've cut the cost of generating proposals in half."

Another partner reports that clients respond positively to the professional appearance of brochures printed on the LaserWriter. He also says, "It's so easy to learn to use the Macintosh. We didn't even have a manual for the program. The ease of use has really been beneficial."

Laser typesetting and copying service

Application: Publications

This business was designed to take advantage of the new Macintosh/LaserWriter technology, offering typesetting and copying services in special packages.

"With a cost basis of word processing and a price basis near typesetting, the profit is fantastic. My customers know they can change their minds, make mistakes, and it won't cost them an arm and a leg or make them miss deadlines."

"Why Apple? I sum it up with four P's: people, productivity, price, and profit. Unlike the MS-DOS systems, it's easy to use. Training is a breeze. And the Macintosh system has all the hardware and software tools you need to increase productivity. With the low cost of the Macintosh, my price is a bargain to customers and represents a hell of a profit margin for me."

A law firm

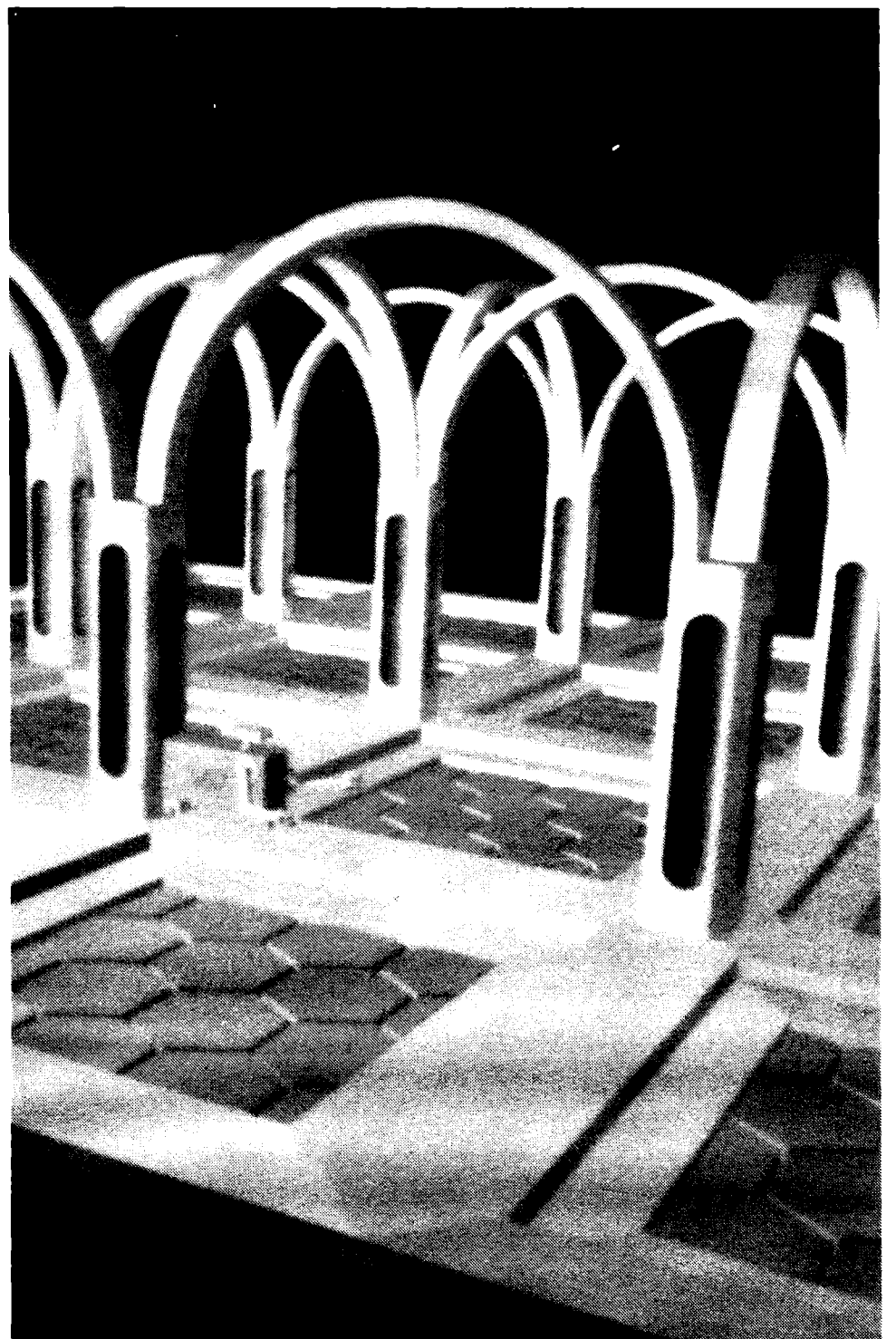
Applications: Correspondence, sketches, manuals, briefs

This law firm uses the Macintosh in just about every aspect of its practice, including trademark registration and graphics, communication with government agencies and trademark and copyright offices, preparation of briefs and correspondence, and database management.

The attorneys like the Macintosh because it saves time, especially in staff training. "Most support staffs don't have extensive computer backgrounds, and a busy office can't afford a lengthy training period. We've found that the Macintosh is far and away the fastest and easiest to learn. We had one employee who was inputting data onto worksheets in ten minutes with the Macintosh."

"Also," says a senior partner, "I have been able to enhance my persuasive capabilities in trademark cases by my ability to manipulate graphics on the Macintosh to prove a point."

"After looking at several alternatives, we decided that the Macintosh had more advanced technology than other machines and was easier to use. We also felt that Apple as a company would be around for the long haul and was a stable choice."



Corporate departments

Large corporations — and their departments — have the same needs as service firms for speed, flexibility, and economy. And they have special needs as well: for in-house publications, for technical proposals with sophisticated graphics, or for charts, graphs, and technical drawings. Often, they require a system that allows many people to work on the same project.

Selling points for corporate departments

- ease of use (minimum training)
- work-group capability and ability to integrate information with MS-DOS and mainframe computers
- professional-quality integration of text and graphics
- internal control over cost and schedule

Subsidiary of a major bank

Applications: Illustrations, logos, sketches, training manuals

This "high-tech" subsidiary of a major New York bank has developed a business software program that allows business customers to use a microcomputer to conduct all their banking.

"We use the Macintosh for everything that's written," says the manager of the publications department.

"We have definitely saved on typesetting costs. We've been able to do publications and graphics in house, without going to outside production firms. As a result, the turnaround time has been much faster. The fact of it is, we would never be producing all these publications materials if it weren't for the Macintosh."

Employee relations department

Applications: Brochures, flyers, newsletters, sketches, illustrations, training manuals

The employee relations department of this major motion picture company uses its Macintosh desktop publishing system to produce a newsletter and communications materials. The weekly newsletter is distributed to 6100 employees.

"I like the way the Macintosh enables us to combine text and graphics with typeset quality — and it's so easy to use!" says the newsletter designer. "Using the Macintosh, we're saving about \$23,000 per year in printshop and typesetting costs. Also, the time savings are noticeable; it used to take three days rush to produce our newsletter, and now we can produce it in 24 hours."

Technical research and development division

Applications: Letters, forms, memos

This technical research and development division uses its Macintosh computers to produce high-quality business correspondence.

As the division coordinator says, "The power and ease of use make the Macintosh an ideal tool for business. The Macintosh meets the user on the user's terms. With other computers, you have to invest much more time."

"If you've learned one Apple program, it's easy to learn another. The architecture has been standardized, and that's made it very easy for the developer and the user. When I put a document together, it looks good — and I personally save a lot of time." ■

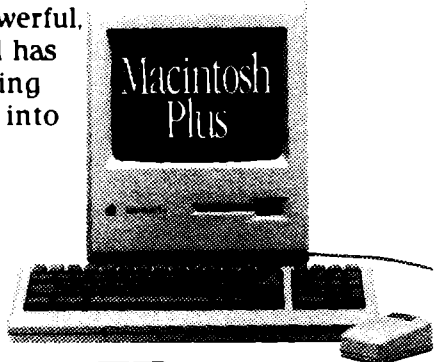
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Boston Law Firm Uses Inbox

When Bob Smith and Brad Wilson, two Boston attorneys, got together in May of 1985 to form Wilson & Smith, Brad Wilson had a vision of a high-tech, computerized office. Bob Smith, however, was skeptical. "To me, office automation meant using a ballpoint instead of a quill pen," he says, "I have a secretary, so I figured I didn't even need a typewriter on my desk."

Wilson pushed and pushed, however, as plans for the new venture came together. He pointed out that the number of law firms in Boston had risen from 150 in 1974 to over 275 in 1985 — an 83 percent increase — during a time when the state's population had only increased by 1 percent, and a competitive law firm would need the latest in technology. Smith ultimately agreed, and soon after the partnership was formed several Macintosh computers were brought into the office.

"That created a whole new set of problems," says Smith. "We had all these computers and my knowledge of them was next to nothing. For the first 10 months, my partner and I would take time out and go to a computer store or dealer to find out how to set up and run a computerized office, with no success! I couldn't send information from my computer to Brad, or visa versa, or to my secretary. We all had computers, but I wasn't using mine at all!"

Finally, Wilson & Smith discovered *Inbox*, from THINK Technologies, Inc., a communication program for use with the AppleTalk® network that makes it easy for Macintosh™ computers to talk to each other. For Bob Smith, it was as if the clouds had parted and sunlight was suddenly shining all through the firm.



"*Inbox* has become our inner office now," says Smith. "We use it for a number of things, including routing and managing our phone messages, sending notes back and forth and for correspondence. If our secretary is working on a contract on her machine that she wants me to read through, she sends it to me using *Inbox*, stating what paragraph needs to be changed and how. I can revise the contract on screen and send it back to her with a note that says this is the revised signature page or whatever."

"The net effect has been a lot more communication around here, and we're a thousand times more organized. Thanks to *Inbox* I can receive my messages at the end of a busy day by clicking my computer's mouse, whether anyone is in the office or not. Brad lives out of town and has a car phone. When he leaves at day's end, the secretary prints out his *Inbox* messages for us. She keeps a copy in a central file as a record. He takes a copy with him and can return his calls from his car."

Inbox on the Macintosh also helps both Wilson and Smith share sudden thoughts or inspirations, without creating distractions or disruptions. "If I think of a great idea late in the evening and want to tell my partner about it, I can leave the idea in his box," Smith says. "This is much better than disturbing him at home."

"Also, he will have a record of when he got my message, and, when he reads it, his machine will tell my machine the time and date the message was received. The message cannot be lost."

Electronic Mail Means A Competitive Edge

This capability helps both partners keep track of dollar amounts that clients owe the firm and the progress of certain jobs. "It's a permanent record," Smith points out, "that helps us along with our billing, maintains records of phone calls and generally helps the business end of our law practice enormously."

Smith says that the quality of documents produced by the Macintosh on the firm's LaserWriter™ printer is good enough for client correspondence and to send to court. What used to take days is now done in minutes, he says.

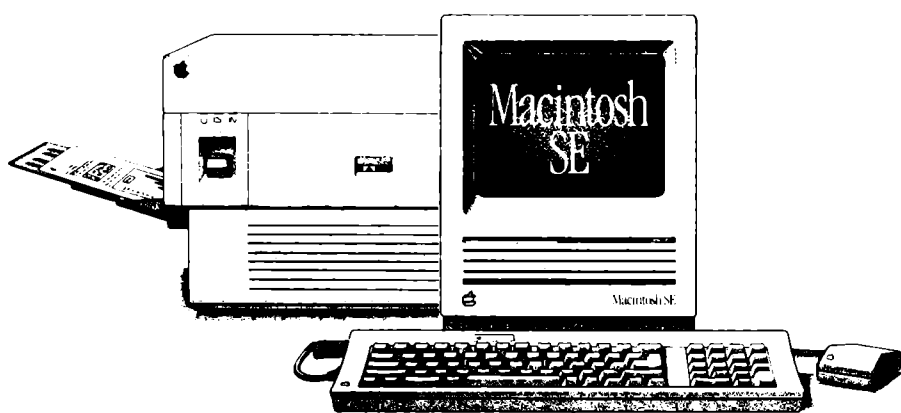
Inbox has been invaluable to the law firm for both communication and organization, according to Smith. "In today's go-go business and economic climate, the aggressive, emerging companies we represent rightly insist upon fast response time from us. *Inbox* gives us that capability."

"Moreover, since a number of our clients are high-tech firms, they like the fact that we are 'high-tech' as well. Our use of the AppleTalk network, including four 512K Macintosh computers, a Macintosh XL and a LaserWriter enables us to put out a truly professional product in a most efficient way, with correspondingly lower costs to our clients. Working at our computers cuts down on dictating, drafting and revision time for our documents and financial analyses. This is most important and helps us compete effectively in the marketplace."

In summary, Smith says, "*Inbox* is an absolutely vital link that transforms our network from simply a series of connections and plugs into an actual communication system. *Inbox* truly revolutionized our business and gave us, for the first time, a fully integrated, computerized office."

— Thom Hartmann

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Macintosh In the News

In our rapidly changing world, newspapers have remained one of the most widely accepted and timely means of communication. Photographs and illustrations have long been used by newspapers to enhance the information content and increase the excitement of stories. With Macintosh computers, the old concept of newspaper graphics has entered a new dimension.

Knight-Ridder Newspapers

Knight-Ridder is a major newspaper chain, publishing 28 papers nationwide. With Macintosh computers and MacDraw® and Microsoft Chart software, newsroom artists can now create original drawings that become part of a computerized graphics library.

With these tools, newspapers can swiftly create high quality maps, charts, graphs and line drawings, incorporating these graphics into breaking news stories. And thanks to Knight-Ridder's sophisticated Graphics Network, the library is available to each paper via an electronic mail and bulletin board system. Artwork can be downloaded and printed in camera-ready form on a LaserWriter™, or it can be modified to fit local requirements before it's printed.

The LaserWriter is the key," says the director of graphics and newsroom technology. "It has true type fonts, the ability to lay down screens, and it gives us copy that we can reproduce and paste down without going through any additional steps. The closest competitors are systems that cost about \$120,000 for a single workstation."

With the success of the Graphics Network internally, Knight-Ridder is now marketing a version called Pres-Link to other publishers on a worldwide basis. The Network will expand to 100 papers by next year.

"The number of artists skilled at creating informational graphics is few, but the demand is growing. We can now take the expertise of talented artists and make this available to newspapers throughout the country. The quality of graphics has improved dramatically over the past year because of this network.

According to Knight-Ridder, small papers are seeing the benefits of the professional graphics formerly typical of larger metropolitan newspapers, at lower cost. With the benefits of sophisticated graphics, the smaller papers look better, more professional, and provide the readers a more varied source of information.

Knight-Ridder uses 50 Macintosh Plus computers with 20 megabyte hard disks, eight of which are networked in the Washington DC area. The software used throughout the network includes MacDraw, Cricket Draw, Cricket Graph, Excel, Overview, Microphone, Microsoft Word, MacTerminal, and Red Ryder. A variety of peripherals are also used, including the LaserWriter Plus, Summagraphics, Keeper, Compuserve, and DialCom (to access government data).

WGBH — Boston

Even though television is such a visual media, one might not immediately link it with use of Macintosh computers. One television station, however, is using Macintosh computers for a variety of applications.

The Marketing Communications division of WGBH, the nonprofit

PBS television station in Boston, uses Macintosh.

Among the uses are:

- Writing proposals for television program funding;
- Creating teacher guides accompanying specific programming (as in NOVA and Living Planet);
- Creating forms for ordering video tapes;
- Managing a database for tracking business requests;
- Designing graphics for animation storyboards and accompanying proposals and brochures;
- Book publishing accompanying programming (as in "Cats and Dogs" book following program of same name); and
- Producing program transcripts.

One senior designer states, "I like the fact that I can use one computer for text, graphics, and database management. I also like the repeatable accuracy. It's nice to be able to make a complex drawing which we can use again and again and customize quickly for a variety of applications.

"I can take on the job of three: the designer, typographer, and paste-up artist. I can create much more elaborate high quality documents with less time. Desktop publishing adds an elegance to the document that you wouldn't attempt with traditional methods."

The designer also mentioned that the Engineering Division has four Macintosh computers, and uses them for a variety of applications. The Marketing Communications division uses Macintosh 512 computers and Hyperdrive20 disks running MacDraw, PageMaker, Microsoft Word, ThunderScan, MacVision, MacDraft, and Easy 3D. Peripherals include a LaserWriter and AppleTalk.

USA Today

Gannett Company, Inc. publishes 93 newspapers out of the nation's capital and some 76 other sites. Its flagship publication is *USA Today*, which has the largest Macintosh and LaserWriter installation of the group. Gannett is establishing a Macintosh network that will allow all of its papers to share publication-quality charts and graphs, and the company is rapidly building a huge library of reusable graphics.

Richard Curtis, *USA Today's* Managing Editor for Graphics and Photography, uses a simple example to illustrate the value and convenience of the graphics network: "If a consumer price index comes out today, every paper in the country is going to do a graphic on it. What's the sense in doing 93 of them and having them all look alike, when you can do just one and share it with 92 other papers?"

Curtis headed the task force that spent two years investigating equipment that would make a group-wide graphics network feasible. The low cost of the Macintosh, especially when compared to the cost of dedicated graphics equipment, persuaded



Curtis to recommend the Macintosh as the computer of choice. Other factors influencing the recommendation were the high quality output and the speed with which artists could become productive. Compared to other machines, the Macintosh required almost no operator training.

A colleague of Curtis', Graphics Editor Buzzy Albert, points out that a graphic representation can often convey more information in a more powerful way than text. He recalls the crash of an Air India jetliner off the coast of Ireland last year, and the subsequent search for the flight recorder. One of the *USA Today* artists suggested that they show their readers what a recorder looks like and how it works. As Albert tells it, "One of our artists went to the FAA, and they

showed him one and even took it apart so we could do a cutaway and show the internal workings. It was a good example of a graphic that was conceived, researched and created by our graphics department."

Commented Richard Curtis, "I suspect that of all newspapers using microcomputers for graphics, 75 percent of them use the Macintosh. With *USA Today*, we're striving not for depth, but for breadth of coverage, and the graphics that the Macintosh make possible help differentiate us from our competitors."

USA Today uses Macintosh Plus and Macintosh 512 computers running Draw, PageMaker, Paint, Microsoft Word, and ReadySetGo. Peripherals include a LaserWriter and ImageWriter®. ■

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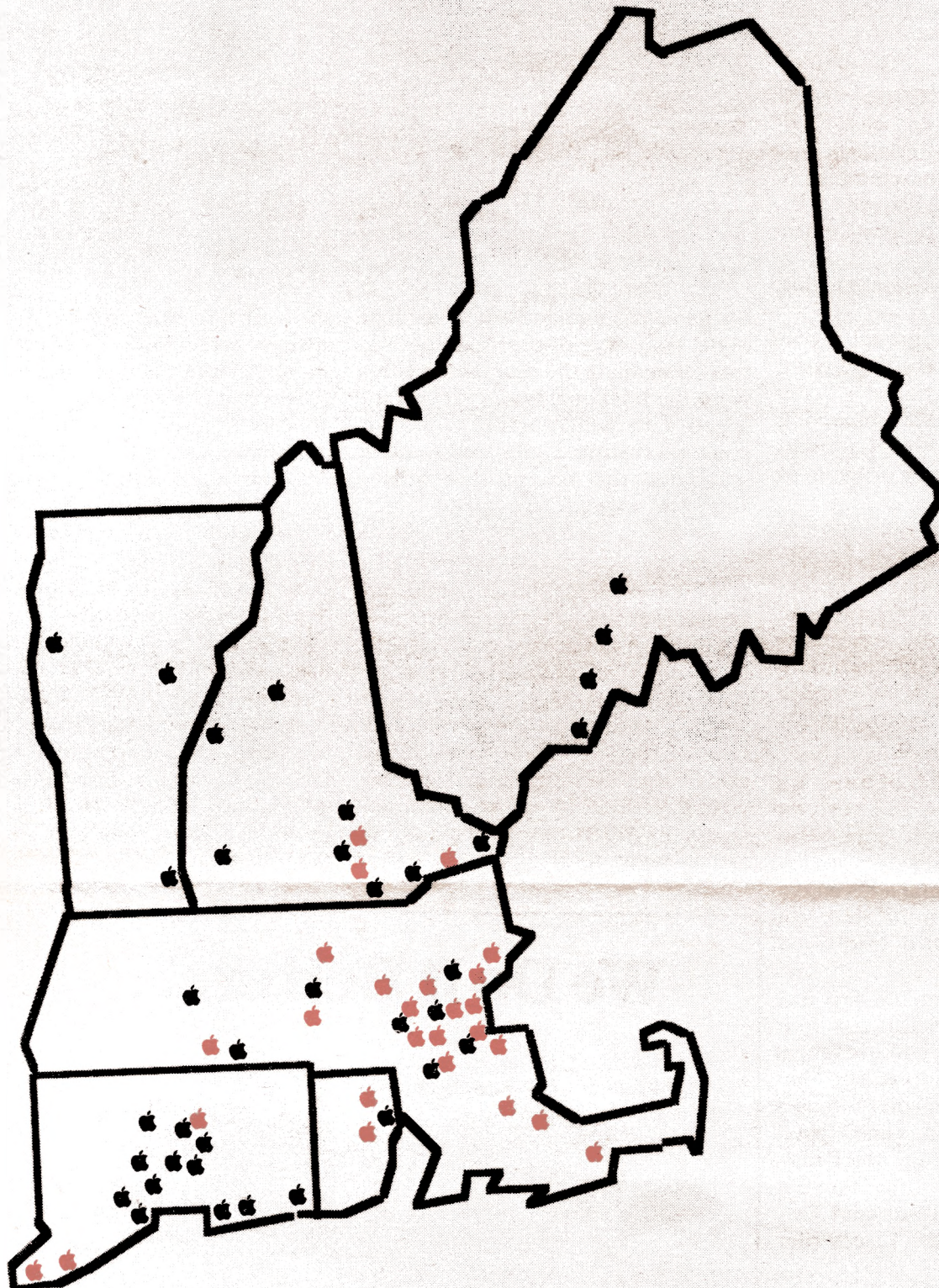
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